

**Claims:**

1. A process for the microbial leaching of sulfidic materials using microorganisms of the *Thiobacillus* genus, characterized in that the leaching fluid includes an amino acid selected from cysteine, methionine or derivatives thereof, or a mixture of said compounds.
2. The process according to claim 1, characterized in that the leaching fluid includes both the microorganisms of the *Thiobacillus* genus and the amino acid or derivatives thereof or a mixture of these compounds.
3. The process according to claim 1, characterized in that the leaching fluid includes the amino acid or derivatives thereof or a mixture of said compounds, and the microorganisms of the *Thiobacillus* genus are added to the discharging fluid.
4. The process according to any of claims 1 to 3, characterized in that the concentration of amino acid, amino acid derivative or of the mixture in the aqueous leaching fluid is  $\leq 8 \times 10^{-3}$  M. *Claim 1*
5. The process according to any of claims 1 to 4, characterized in that the pH value of the leaching fluid is adjusted to 1-4, preferably to 1.5-2.0. *Claim 1*
6. The process according to any of claims 1 to 5, characterized in that *T. ferrooxidans* is used as *Thiobacillus* species. *Claim 1*
7. Use of an amino acid selected from cysteine, methionine, or derivatives thereof, or a mixture of

1  
said compounds in the microbial leaching of sulfidic materials.

8. The use according to claim 7, characterized in that the sulfidic materials are sulfide ores, preferably pyrite.

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